# EVIDENCE FROM BROADBAND ROTATIONAL SPECTROSCOPY FOR A COMPLEX BETWEEN AgCCH AND $C_6H_6$

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Last year, at the 68th International Symposium of Molecular Spectroscopy, the rotational spectrum of a complex formed between $C_2H_2$ and AgCCH was presented. The geometry was found to be T-shaped with the silver atom coordinated to the center of the CC bond in acetylene. Evidence for a new complex formed between AgCCH and $C_6H_6$ is now presented in the form of deep-averaged broadband rotational spectra. The spectra are observed only when both $C_2H_2$ and $C_6H_6$ are present in the gas sample. The relative intensities of the observed spectra are consistent with the naturally-occurring abundance ratio of the isotopes of silver. The shift on substitution of $^{107}$Ag for $^{109}$Ag implies a silver atom positioned close to the center of mass. The isotopic shifts observed when $C_2D_2$ is used as a precursor instead of $C_2H_2$ are also consistent with assignment to a complex formed between $C_6H_6$ and AgCCH/D. The geometry of the complex is yet to be precisely established.